

CLASS 95, GAS SEPARATION: PROCESSES

CLASS DEFINITION

This class provides for processes involving steps resulting in separation of a gas from a fluid mixture comprising (i) a gas and solid or liquid particles entrained therein, (ii) a liquid and gas entrained therein, or (iii) a plurality of gases. As a general rule for this class, there must be a relationship of process steps embracing: (a) inflow of the fluid mixture to be treated, (b) a step or steps effective to cause the separation into constituent parts, and (c) an outflow of at least one constituent which is separate and distinct from the outflow of another constituent, including outflow of a constituent by removing the separating medium itself. The gas separation for this class is effected by processes other than chemical reaction.

The basic subject matter of this class is of a subcombinational nature and may include only such ancillary process steps (e.g., fluid handling, etc.) as are necessary to perfect the gas separating function. Significant inclusion in a claim of features beyond merely perfecting the gas separating function indicates classification in a more comprehensive class. Thus, the combination of a gas separation process of this class and any cleaning or regenerating of the separation media is properly in this class, because the cleaning or regenerating is perfecting the gas separating function. Generally, however, the mere naming of an art process in a claim to gas separation does not affect classification. Thus, a claim to filtration of a gas from a named source with no details of that source is proper for this class.

(1) Note. The gas separation processes for this class generally involve the use of physical chemistry, chromatography, solid sorption, gas and liquid contact, gas contact, electrical fields, magnetic fields, wave energy, selective diffusion, filtration, deflection, or other mechanical means. (Also see Lines with Other Classes, below.)

(2) Note. This class also provides for processes in which the fluid mixture is treated to change its make-up, but no real separation occurs, provided no other suitable classification exists. Accordingly, in this class are found processes of using "spark arresters," which merely change the size of particles entrained in a gas. These devices are usually deflectors or screens. The processes of using them are included in this class because of their similarity to processes which actually separate the fluid mixture into constituent parts. Similarly, agglomeration, which by itself may not separate particles entrained in a gas, but cause small particles entrained therein to join together or coalesce to form larger particles, is in this class unless basis for other classification exists.

LINES WITH OTHER CLASSES

The gas separation processes for this class generally involve the use of physical chemistry, chromatography, solid sorption, gas and liquid contact, gas contact, electrical fields, magnetic fields, wave energy, selective diffusion, filtration, deflection, or other mechanical means. See the class search note in section III for Class 423, Chemistry of Inorganic Compounds, for the line concerning the processes in which the gas separation is caused by a chemical reaction. Also, see the class search note in section III for Class 588, Hazardous or Toxic Waste Destruction or Containment, for the line concerning the processes in which the gas separation is caused by destruction or permanent containment of the hazardous or toxic waste.

Degassing or purging processes for the removal of a gas from a solid will be placed in the class where the solid is either manufactured or treated. The

- (1) Note. See subclass 157.6 for a definition of the term "organic compound".

SEE OR SEARCH CLASS:

- class 210 for liquid*
- 260, Chemistry of Carbon Compounds, 518, Chemistry: Fischer-Tropsch Processes; or Purification or Recovery of Products Thereof, 530 - 570, Organic Compounds -- Part of the Class 532 - 570 Series, and 585, Chemistry of Hydrocarbon Compounds, for processes of purifying an organic compound by chemical reaction induced by other than wave energy.

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Electrostatic field or electrical discharge:

Chemical processes which have for their purpose the preparation of compounds or elements through chemical reactions brought about by the agency of electrical energy within an electrostatic field or a field within which electrical discharging takes place. For example, the conversion of the surface of a polymeric material to produce a film thereon. This group includes both the synthetic production of compounds or elements and, likewise the chemical modification or chemical purification of compounds or elements, making use of electrical energy to effect the chemical changes in such processes. The processes falling within this group of subclasses are those whose purpose is for the production of compounds or elements by chemical reaction, but not those wherein a material or composition is treated, such as a metal, tobacco, foods, beverages, leather and the like, and in which a chemical change may be brought about. This group of subclasses likewise includes processes wherein one or both of the reactants are subjected to an electrostatic field or electrical discharge for the purpose of activation and the desired reaction is effected by mere mixing while such reactant or reactants are in the activated condition. This usually consists of a step of ionization followed immediately by mixture with another ionized or unionized substance, the reaction following as a matter of course due to the condition of the mixed reactants.

- (1) Note. For chemical processes brought about in a zone wherein both a magnetic field and discharging occurs, see this class, subclass 156.
- (2) Note. For electric charge generating or conducting apparatus (ionizing devices) see Class 361, Electricity: Electrical Systems and Devices, subclasses 230+.

SEE OR SEARCH CLASS:

- 422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, 186.04+ for corresponding apparatus.
- 588, Hazardous or Toxic Waste Destruction or Containment, appropriate subclasses for the use of electrostatic field or electrical discharges in the destruction of hazardous or toxic waste.

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Organic:

This subclass is indented under subclass 164.
Processes directed to the production of organic compounds.